

Claim Amendments:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A bioactive artificial sintered composition for supporting bone cell activity, said composition ~~comprising~~ consisting essentially of:

~~a powder or bulk material of stabilized tricalcium phosphate and hydroxyapatite in a ratio of at least 50:50 tricalcium phosphate:hydroxyapatite, insoluble in physiological fluids wherein the stabilized tricalcium phosphate is stabilized with a stabilizing entity, entities uniformly throughout the entire composition, and wherein said uniformly stabilized tricalcium phosphate is resorbable by osteoclasts and promotes secretion of mineralized bone matrix by osteoblasts,~~

~~wherein said stabilizing entities are selected from the group consisting of silicon entities, aluminum entities, barium entities, titanium entities, germanium entities, chromium entities, vanadium entities, niobium entities, boron entities and mixtures thereof;~~

wherein said composition is bioactive to support osteoblastic bone growth and to support extracellular resorption of said composition by osteoclasts.

2. (Currently Amended) [[A]] The composition as claimed in claim 1, wherein said stabilized tricalcium phosphate is primarily alpha tricalcium phosphate.

3. to 11. – Cancelled

12. (Currently Amended) [[A]] The composition as claimed in claim 1, wherein said composition is insoluble in physiological fluids, said physiological fluids having [[have]] a [[of]] pH of approximately 6.4 to 7.3.

13. to 22. - Cancelled

23. (Previously Presented) The composition of claim 1, where said composition is provided as a microporous polycrystalline structure.

24. to 25. - Cancelled

26. (Currently Amended) The composition of claim ~~[[25]]~~ 1, wherein ~~said morphology comprises~~ said composition is in the form of rounded granules with a lateral dimension of about 0.5 μm to 1 μm .

27. to 37. - Cancelled

38. (Currently Amended) The composition of claim 1, wherein said stabilizing ~~entities~~ are entity is silicon.

39. to 46. - Cancelled.

47. (New) The bioactive artificial sintered composition of claim 1, wherein said ratio is in a range of 50:50 to 80:20.

48. (New) The bioactive artificial sintered composition of claim 1, wherein said ratio is at least 666:333.

49. (New) The bioactive artificial sintered composition of claim 48, wherein said ratio is in a range of 666:333 to 80:20.

50. (New) A bone replacement composition comprising tricalcium phosphate and hydroxyapatite in a ratio of at least 666:333 tricalcium phosphate to hydroxyapatite, wherein the tricalcium phosphate is stabilized with a stabilizing entity selected from the group consisting of silicon entities, aluminum entities, barium entities, titanium entities, germanium entities, chromium entities, vanadium entities, niobium entities, boron entities and mixtures thereof.

51. (New) The bone replacement composition of claim 50, wherein the stabilizing entity includes silicon entities.

52. (New) The bone replacement composition of claim 50, wherein the ratio is 666:333 to 80:20.

53. (New) The bone replacement composition of claim 50, wherein the composition consists essentially of the stabilized tricalcium phosphate and the hydroxyapatite.

54. (New) The bone replacement composition of claim 50, wherein the stabilized tricalcium phosphate is stabilized alpha-tricalcium phosphate.

55. (New) A bioactive artificial sintered composition for supporting bone cell activity, the composition comprising:

stabilized tricalcium phosphate and hydroxyapatite in a ratio of at least 666:333 tricalcium phosphate to hydroxyapatite, wherein the stabilized tricalcium phosphate is stabilized with a stabilizing entity selected from the group consisting of silicon, aluminum, barium, titanium, germanium, chromium, vanadium, niobium, boron, and mixtures thereof;

wherein the composition is insoluble in physiological fluids of pH 6.4 to 7.3;

wherein the composition is bioactive to support osteoblastic bone growth and to support extracellular resorption of the composition by osteoclasts.

56. (New) An implantable calcified bone matrix comprising:

a) the composition of claim 50 forming a structure for supporting a calcified bone matrix;
and

b) the calcified bone matrix secreted by osteoblasts on the structure, wherein the matrix is free of bone cells including osteoblasts.